State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

August 25, 2006

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST FOR APPROVAL TO IMPLEMENT LANDOWNER INCENTIVE PROGRAM PROJECTS

This Board Submittal approves contractual relationships for five projects on private lands throughout the State that benefit threatened and endangered species and authorizes the Chairperson to develop and enter into contracts and/or Purchase Orders for these services, subject to the certification of availability of funds.

BACKGROUND: The U.S. Fish and Wildlife Service (FWS) provides funds to State landowner assistance programs that provide financial assistance to private landowners to enhance, protect, or restore habitats that benefit federally listed, proposed, or candidate species, or other at-risk species through a federal funding program called the Landowner Incentive Program (LIP).

During the first two years of the program, the Division of Forestry and Wildlife (DOFAW) was awarded over 2.6 million dollars to distribute to private landowners working on 24 different projects. During this third year, DOFAW once again publicized the program via press releases and the internet and solicited potential projects for funding. DOFAW received 13 applications requesting over two and a half million dollars in funding. A committee composed of DOFAW and FWS staff reviewed and ranked each application for applicability to program guidelines established by FWS, particularly whether the project involved "on-the-ground" efforts towards protecting or enhancing habitat for species at risk on private lands, and whether the application included sufficient details to evaluate the costs and benefits of the project. A total of 5 projects were awarded $314,446 in federal funds and will benefit over 87,000 acres on the islands of Maui and Hawaii.

Descriptions of the five projects are attached (Attachment A). DOFAW will provide technical assistance to private landowners to implement funded projects, provide administrative and fiscal oversight, and prepare annual fiscal and progress reports for distribution to funding agencies and the public. These projects support the ongoing efforts of the Department of Land and Natural Resources to protect threatened and endangered species, as well as to promote environmental education opportunities and community participation.

Project		Landowner	Amount
LIP-25	Kahikinui Forest Restoration Community Initiative	Living Indigenous Forest Ecosystems (LIFE)	$156,803
LIP-26	Watershed Protection and Threat Control in the East Maui Watershed	Halekala Ranch/EMI	$ 64,170
LIP-27	Restoration of Forest Habitats at Kaupulehu, Hawaii	Kamehameha Schools	$ 42,218
LIP-28	Leeward Haleakala Invasive Tree Management And Koa Forest Restoration	Nu'u Mauka/Ulupalakua Ranches	$ 27,770
LIP-29	Watershed and Rare and Endangered Species Protection Project in the Native Forested West Maui Mountains Watershed Partnership Land Holdings	WMMWP Private landowners	$ 23,400

CONTRACT PROVISIONS

Contracts and/or Purchase Orders will be negotiated with the organizations authorized by the landowner to implement the projects according to their project descriptions.

RECOMMENDATION:

That the Board: 1) approve implementation of the LIP program for Year 3; and 2) authorize the Chairperson to negotiate and execute Contracts or Purchase Orders for Services subject to:

a. Scope of Services as described on attached Project Descriptions
b. Availability of federal funds
c. Approval as to form by the Attorney General's Office for Contracts

Respectfully submitted,

Paul J Conry

PAUL J. CONRY, Administrator
Division of Forestry and Wildlife

Attachments

APPROVED FOR SUBMITTAL:

PETER T. YOUNG, Chairperson
Board of Land and Natural Resources

ATTACHMENT A

LIP-25: Kahikinui Forest Restoration Community Initiative

Need:
Native Hawaiian dry and mesic forests have special conservation value because of their high biodiversity and because they provide critical habitat and recovery habitats for endemic birds, plants, and invertebrates. Of particular significance for endangered birds are montane habitats that provide refugia from devastating introduced diseases such as avian malaria and avian poxvirus. Dry and mesic forests in Hawaii have been severely degraded or completely destroyed leading to steep declines and extinctions of native species. For most remnants that remain, feral ungulates, invasions of alien plant species, and fire cycles continue to pose threats. In the absence of protection and management, these habitats remain vulnerable and unsuitable as habitat for many native species, including numerous threatened and endangered species, and species of concern. Large acreages of remnant forests on leeward Haleakala, Maui maintain cost-effective restoration potential, and given adequate protection and restoration effort, will benefit and support diverse native ecosystems. Partnerships and management plans are now in place to remove ungulates from large areas in this region to restore native ecosystems. Limited funding has been secured by some landowners to begin fence construction and implement fire suppression measures. Additional funding is needed to enhance cost-effectiveness of Partnership collaborations to provide forest protection at biologically meaningful regional scales, to support alien vegetation and ungulate removal, and to begin outplanting and restoration work.

Objectives:
A 6-mile fence will be installed to exclude ungulates from a 3,000 acre exclosure. Funds provided by this grant will fund construction of approximately 1.1 miles of the 8-foot ungulate-proof fence. Begin removal of all ungulates from the resulting fenced exclosure.

Expected Results and Benefits:
This work will protect and restore >3,000 acres that provides Essential Recovery Habitat for five endangered bird species (Hawaiian Forest Bird Recovery Plan, USFWS 2003), Critical Habitat for 10 endangered plant species (http://pacificislands.fws.gov/CHRules/mauimap.pdf), and support for dozens of other native, endemic, and species of concern. It is a key contribution to Partnership work in progress to fence, protect, and restore >11,000 acres of adjacent, contiguous land in the region, and provides an important management unit boundary for this Partnership. Restoration will increase ecosystem diversity, providing habitat for numerous endangered and threatened plant and animal species (list attached), including several for which captive propagation and reintroduction programs are underway. The increase in population sizes and distributional ranges that result for these species is expected to significantly reduce the risk of extinction. Fire risks will likely diminish as the forest canopy closes and grass densities decline due to increased shading. Changes in soil moisture and wind velocity due to increases in tree size and density should also lead to reduced fire threats. This work is expected to serve as a model for landscape-level habitat restoration efforts statewide, and provide educational benefits through extensive community involvement.

Approach:
The State Division of Forestry and Wildlife will assist the landowner in implementing the proposed project through the utilization of the State Procurement Office competitive bid process. Ungulates will be removed through community and public hunting efforts, or professional contracts as needed.

Location: Portions of Department of Hawaiian Homelands (DHHL) parcel TMK# 2-1-9-001-007, located on the southern and leeward slopes of Haleakala Volcano, Maui, Hawaii.

Estimated Costs:

Federal Funds:	$156,803
Non-Federal Funds:	$ 52,275
Total Costs:	$209,078

LIP-26: Watershed Protection and Threat Control in the East Maui Watershed

Need:
The East Maui Watershed comprises 100,000 acres of native forested ecosystems, representing the largest intact native forested area on the Island of Maui and one of the largest intact native areas in the state. The project is part of the East Maui Watershed Partnership (EMWP), an ongoing effort to protect approximately 9,500 acres of pristine native forest in East Maui from ungulate disturbance and invasive weed encroachment. Based upon studies conducted by the EMWP, feral ungulate disturbance and invasive weed encroachment are degrading these native forested ecosystems. Feral pigs and other introduced ungulates are the primary cause of vegetation loss in Hawaiian forested watersheds. This is cause for concern because large areas of bare ground result in unnaturally heavy erosion of the soil layer during rainfall events, and non-native plants have an advantage over less competitive native species by adapting to soils disturbed by animals. The native forest is an efficient and clean collector and distributor of fresh water, covering over 14 natural community types and providing habitat for at least 36 threatened and endangered species and 48 species that are candidates for listing or species of concern. The project area was proposed as critical habitat for endangered plant species but excluded from the final designation because the landowners agreed to implement management actions such as those detailed in this project proposal.

Objective:
Conduct ~3,200 man-hours implementing ungulate management and invasive plant removal programs in a ~3,000-acre project site above EMWP fences, focusing efforts on priority weeds identified by The Nature Conservancy. Hunters escorted to the area by project staff will remove ungulates. Monitoring transects will be installed to record levels of vegetation disturbed by ungulates. As ungulates are removed, it is expected that reductions in percent vegetation disturbed will decrease over time. As the presence of established and not yet established priority weeds are removed in the project area, native plants will no longer be threatened and populations are expected to increase over time. A four-mile length of fence will be inspected for damage.

Expected Results and Benefits:
As shown in other areas where feral animals have been excluded, the regeneration of candidate and endangered species and the ecosystem in which they live are expected to regenerate quite readily. The successful completion of the project will ensure that native forested watershed areas will be protected from damage caused by ungulate activity. The removal of plant and animal threats in this area will allow natural plant communities to flourish, protect threatened and endangered plants and the native rainforest's soil and vegetation, and prevent or significantly reduce the potential of exotic plant species to become established.

Approach:
In areas where soil disturbance from ungulate activity is identified, the EMWP, with support from TNC, Haleakala National Park and the State of Hawaii, will implement animal control programs to reduce the population of feral pigs that are still present above the fence line. EMWP personnel have worked closely with The Nature Conservancy to scout for and remove invasive plant species that are present in EMI lands adjacent to Waikamoi Preserve. EMWP staff will continue this work and expand upon the progress TNC has made in this program.

Location:
Haleakala Ranch parcel TMK 2-3-05-4, and East Maui Irrigation (EMI) parcel TMK 2-4-16-4, Maui, Hawaii.

Estimated Costs:

Federal Funds:	$ 64,170
Non-Federal Funds	$ 21,390
Total Costs:	$ 85,560

LIP-27: Restoration of Forest Habitats at Kaupulehu, Hawaii

Need:
At one time in Hawaii, dry forests occupied much of the leeward lowlands of all the main Islands and were a center of high diversity for native tree species. Dry forests had been all but totally eliminated by agriculture, livestock grazing, and development by the 1950's. Less than 10% of the former extent of Hawaiian dry forests remains today. On the Big Island, dry forest once blanketed the slopes above the kona side, and only a few remnants, such as Kaupulehu, exist to this day.

Objectives:
Kaupulehu Mauka Preserve: The 6-acre Preserve has been fenced continuously since the 1950's, and the lack of feral goats has allowed for the survival of the native forest species found within, compared to areas found outside the fenced exclosure. The three most critical threats to the Kaupulehu area are clear – goats, fountain grass, and wildfire. Primary objectives for Kaupulehu are: 1. Bring control of fountain grass, lantana, and other key aliens back to acceptable levels. 2. Re-establish and maintain firebreaks around the preserve. 3. Replace the current deteriorating fence. 4. Monitor and deter any feral goat.

Expected Results and Benefits:
Actions at the Kaupulehu Mauka Preserve will protect at least 7 listed plant species and specific recovery measures will include horticultural care and outplanting of at least four listed species.

Approach:
Control of fountain grass within the Kaupulehu Mauka Preserve will be achieved utilizing string trimmers, herbicides, and hand weeding. Lantana and other species will be controlled using a cut stump application of Garlon 4. Performed at quarterly intervals, this will be sufficient to keep fountain grass and other aliens at an acceptable level of control. To protect the Preserve from the threat or fire, firebreaks must be maintained quarterly to keep fuel levels low and discontinuous.

Location:
Kaupulehu Mauka Preserve, Hawaii., TMK3-7-2-002-011

Estimated Costs:

Federal Funds:	$ 42,218
Non-Federal Funds:	$ 14,075
Total Costs:	$ 56,293

LIP-28: Leeward Haleakala Invasive Tree Management and Koa Forest Restoration

Need: The native forests of leeward Haleakala volcano, East Maui were historically considered by many biologists to be the richest of Hawaiian terrestrial ecosystem. Sadly, very little of that forest remains today. In June of 2003, the Leeward Haleakala Watershed Restoration Partnership (LHWRP) formed with the goal of restoring the koa forests of leeward Haleakala in efforts to enhance the watershed, increase biodiversity, allow for alternative economic means for rural lifestyle and finally, for the prosperity of cultural practices. Currently there are two threats to restoration of forests on the leeward slopes, ungulates and invasive trees moving in from Kula Forest on the west edge and from Kaupo Gap on the east edge. Some areas of the LHWRP have already been fenced to exclude ungulates other areas are aiming to fence in the coming years. In the meantime, invasive trees are marching out of the edges of this partnership and moving toward the large weed-free central area. In order for restoration goals to be realized, these invasive trees must be controlled. There are few established trees, however they are beginning to spread and threaten to alter the habitat where numerous rare and Endangered species remain.

Dealing with invasive species is a number game. The fewer there are, the less resources it takes to eliminate them. If we wait to deal with these satellite tree populations, not only will the trees continue to disperse across the slope via the wind, but the soil will also accumulate a seed bank. At this stage, a minimal amount of aerial control from a helicopter will help conserve the habitat of rare and Endangered species as well as provide a clean slate for restoration efforts to proceed. The invasive trees of concern are silk oak, *Grevillea robusta*, wattle, *Acacia mearnsii*, *Bocconia frutescena* and various types of pines. Silk oak is moving in a westerly direction from Nu'u Mauka Ranch. If the limited infestation on Nu'u Mauka Ranch was controlled, the rest of the slope would remain free of silk oaks. The wattle, bocconia and pines are moving in an easterly direction from the Kula Forest Reserve and through Ulupalakua Ranch. Over the last few decades Ulupalakua Ranch has witnessed the loss of much land to wattle thickets so dense that it is difficult for people to walk through. These wattle groves choke out native plants and deposit huge seed banks in the soil. It is important to prevent the spread of invasive trees that will limit the long-term success of restoration of koa forests, and which currently threaten the habitat of rare and Endangered Hawaiian plant species.

Objective: The objective of this proposal is to combat invasive weeds in order to prevent them from establishing stands on Haleakala's leeward slope. Due to the topography and the distribution of trees, the most efficient method of control is via aerial application of herbicide. After the trees are controlled restoration efforts including out-planting of native plants will follow.

Expected Results and Benefits: Eliminating satellite tree populations will decrease the time and expense required to perform this task later. The goal is to keep the leeward slopes of Haleakala free of invasive trees to ensure habitat for ten Endangered plant species, two candidate species and many other rare native Hawaiian plants. In addition, the removal of trees will be followed up with out-plantings of koa, *Acacia koa*, and other native plants.

Approach: Due to the rugged terrain and scattered populations of trees, the most efficient method to control satellite populations of invasive trees is with aerial application of herbicides. In order to run a smooth and safe helicopter operation, three or four trained field crew staff are on the ground to assist with helicopter refueling and loading of herbicide. In addition, one field crew staff is in the helicopter to help navigate and track kill sites with GPS. The GPS tracking will allow us to monitor the invaded sites over time.

Location: Nu'u Mauka Ranch, TMK# 2-1-8-001-001 and Ulupalakua Ranch: TMK# 2-2-1-009-002 and 2-1-8-001-006, Maui, Hawaii

Estimated Costs:

Federal Funds:	$ 27,686
Non-Federal Funds	$ 19,840
Total Costs:	$ 47,526

LIP-29: Watershed and Rare and Endangered Species Protection Project in the Native Forested West Maui Mountains Watershed Partnership Private Land Holdings

Need:
The West Maui Mountains Watershed Partnership is an ongoing private-public effort to protect ~53,000 acres of native rain forest and other unique ecosystems, globally imperiled natural communities, and habitat for dozens of rare, threatened, and endangered species. The major landowners of the 29,849 acres of private land are: Maui Land & Pineapple Co., Ka'anapali Land Company, Kahoma Land, Makila Land Co., Kamehameha Schools, and C. Brewer & Co.. While individual land managers have worked for years to protect smaller portions of the watershed, it is now clear that in order to mitigate threats in individual sections of forest those threats must be addressed over the entire landscape. Ungulate removal and weed control projects must be implemented at the landscape level in order to assure that these threats do not continually invade managed areas from unmanaged areas. Rare plants and animals will benefit from this ecosystem wide approach as all forest types that provide habitat for rare elements will be managed for long term survival.

Objective:
Conduct ~1,000 man-hours implementing these specific objectives: 1) Map and scout private lands for ungulates and weeds, 2) Add additional animal control measures to private lands based on scouting.

Expected Results and Benefits:
Private lands totaling 29,849 acres will benefit directly from objectives in this proposal with an additional 2,001 acres owned by the County of Maui DWS. Although not the focus of proposed objectives, State lands total 21,089 acres will indirectly benefit from work performed on private lands. It is expected that implementation of this project will contribute to the reduction of feral ungulate disturbance in the upper elevations of the watershed (above 3,000 feet) to near zero. Additionally, belt transects will show a continued reduction of ungulate disturbance in the lower portions of the project area. Significant threat reduction to the Hanaula forest (C. Brewer land) area will result from the removal of the last feral cattle in that area. Implementation of snaring programs in the Makila, Kahoma, and Waihe'e areas will begin reducing ungulate disturbance. Lastly the establishment of a repeatable rare plant survey and mapping program will significantly aid in the monitoring of rare plant health throughout the project site, and will provide valuable information for the continued protection of those rare elements.

Approach:
Removal of ungulates and weeds from the project area will primarily be carried out by the experienced West Maui Mountains Watershed crew in conjunction with field staff of the partner organizations (especially Maui Land & Pineapple Company's Pu'u Kukui Watershed, The Nature Conservancy of Hawaii, and the State Division of Forestry and Wildlife), or trained volunteers. Access to the project site will be through the use of helicopters and four wheel drive vehicles. The ungulate control program will use a combination of fencing, hunting and snaring, and aerial shooting to bring populations down as rapidly as possible. Feral animal control is a necessary starting point for an effective weed control program. Control methods for weeds will also include manual pulling and chemical treatment.

Location:
Privately owned lands of the West Maui Mountains Watershed, Island of Maui

Estimated Costs:

Federal Funds:	$ 23,570
Non-Federal Funds	$ 7,875
Total Costs:	$ 31,445